

For current pricing, please see our website.

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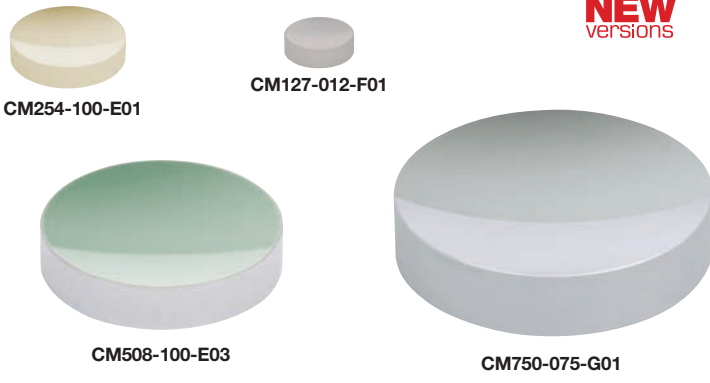
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# Concave Spherical Mirrors (Page 1 of 2)



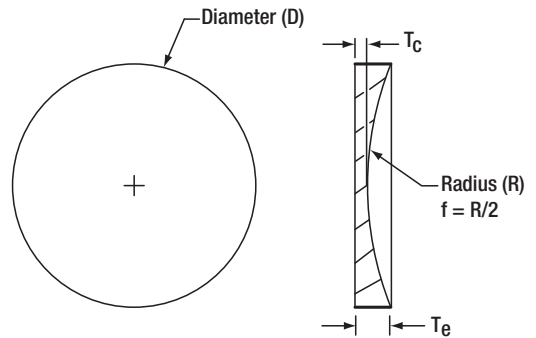
Sizes: Ø1/2", Ø1", Ø2", Ø75 mm

## Specifications

- **Focal Lengths:** 12 mm – 500 mm
- **Substrate Material:** N-BK7
- **Reflective Coatings:** Metallic and Dielectric Coatings
- **Clear Aperture:** >90% of Diameter
- **Front Surface Irregularity:** <math>\lambda/4</math> at 633 nm
- **Front Surface Quality:** 40-20 Scratch-Dig
- **Back Surface:** Fine Ground
- **Diameter Tolerance:** +0.0/-0.2 mm
- **Thickness Tolerance:**  $\pm 0.2$  mm
- **Chamfer:** 0.25 mm @ 45° Typical

Thorlabs' Broadband Concave Mirrors offer high reflectance in broadband applications where the chromatic aberration introduced by a lens is not acceptable. When used close to 0° angle of incidence to collect and focus light for imaging applications, these mirrors provide >90% reflectance with the metallic coatings and >99% reflectance with the dielectric coatings.

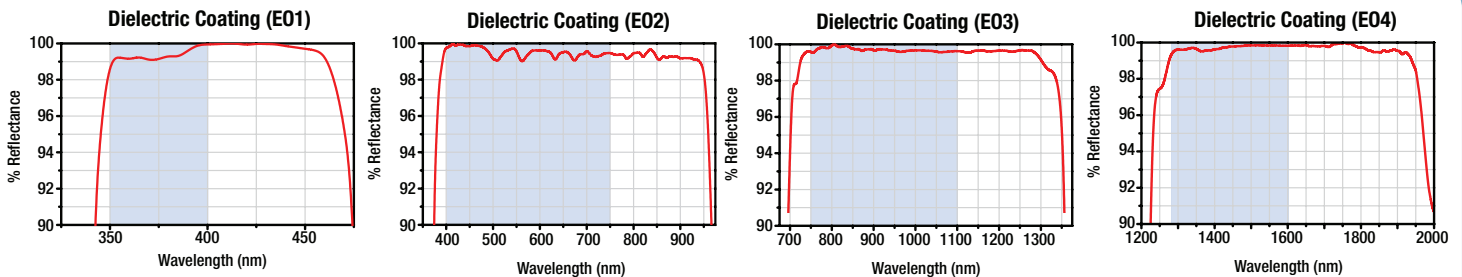
Spherical Concave Mirrors are defined by the focal length,  $f$ , of the optic being half of its radius of curvature,  $R$ . To achieve the best performance without the introduction of off axis aberrations, concave mirrors should be used close to 0° angle of incidence.



Please refer to our website for complete models and drawings.

COATING DESIGNATION	COATING TYPE	WAVELENGTH RANGE	REFLECTANCE	DAMAGE THRESHOLD
F01	UV Enhanced Aluminum	250 – 450 nm	> 90%	0.3 J/cm <sup>2</sup> (355 nm, 10 ns, 10 Hz, Ø0.381 mm)
G01	Protected Aluminum	450 – 20 $\mu$ m	> 90% from 450 – 2 $\mu$ m > 95% from 2 - 20 $\mu$ m	0.3 J/cm <sup>2</sup> (1064 nm, 10 ns, 10 Hz, Ø1.000 mm)
P01	Protected Silver	450 nm – 20 $\mu$ m	> 97.5% from 450 – 2 $\mu$ m > 96% from 2 - 20 $\mu$ m	3 J/cm <sup>2</sup> (1064 nm, 10 ns, 10 Hz, Ø1.000 mm)
M01	Protected Gold	800 nm – 20 $\mu$ m	> 96%	2 J/cm <sup>2</sup> (1064 nm, 10 ns, 10 Hz, Ø1.000 mm)
E01	Dielectric E01	350 – 400 nm*	> 99%	1 J/cm <sup>2</sup> (355 nm, 10 ns, 10 Hz, Ø0.373 mm)
E02	Dielectric E02	400 – 750 nm*	> 99%	0.25 J/cm <sup>2</sup> (532 nm, 10 ns, 10 Hz, Ø0.803 mm)
E03	Dielectric E03	750 -1100 nm*	> 99%	1 J/cm <sup>2</sup> (810 nm, 10 ns, 10 Hz, Ø0.133 mm), 0.5 J/cm <sup>2</sup> (1064 nm, 10 ns, 10 Hz, Ø0.433 mm)
E04	Dielectric E04	1280 – 1600 nm*	> 99%	2.5 J/cm <sup>2</sup> (1542 nm, 10 ns, 10 Hz, Ø0.181 mm)

\*See plots below



The shaded region represents the specified region for each coating. However when used at near 0° AOI, as is recommended for a concave mirror, the wavelength range where the mirror has a high reflectance is significantly larger as can be seen in the performance plots above.

## Concave Spherical Mirrors (Page 2 of 2)

### E01 (350 – 400 nm) Broadband Dielectric Coated Concave Spherical Mirrors

ITEM #	\$	£	€	RMB	D	f	R	T <sub>c</sub>	T <sub>e</sub>
CM127-012-E01	\$ 108.00	£ 77.76	€ 93,96	¥ 860.76	1/2"	12 mm	24 mm	3.0 mm	3.8 mm
CM127-025-E01	\$ 108.00	£ 77.76	€ 93,96	¥ 860.76	1/2"	25 mm	50 mm	3.0 mm	3.4 mm
CM127-050-E01	\$ 108.00	£ 77.76	€ 93,96	¥ 860.76	1/2"	50 mm	100 mm	3.0 mm	3.2 mm
CM254-025-E01	\$ 154.00	£ 110.88	€ 133,98	¥ 1,227.38	1"	25 mm	50 mm	6.0 mm	7.6 mm
CM254-050-E01	\$ 154.00	£ 110.88	€ 133,98	¥ 1,227.38	1"	50 mm	100 mm	6.0 mm	6.8 mm
CM254-075-E01	\$ 154.00	£ 110.88	€ 133,98	¥ 1,227.38	1"	75 mm	150 mm	6.0 mm	6.5 mm
CM254-100-E01	\$ 154.00	£ 110.88	€ 133,98	¥ 1,227.38	1"	100 mm	200 mm	6.0 mm	6.4 mm
CM508-050-E01	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	50 mm	100 mm	9.0 mm	12.3 mm
CM508-100-E01	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	100 mm	200 mm	9.0 mm	10.6 mm
CM508-150-E01	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	150 mm	300 mm	9.0 mm	10.1 mm
CM508-200-E01	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	200 mm	400 mm	9.0 mm	9.8 mm
CM750-075-E01	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	75 mm	150 mm	12.0 mm	16.8 mm
CM750-150-E01	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	150 mm	300 mm	12.0 mm	14.4 mm
CM750-200-E01	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	200 mm	400 mm	12.0 mm	13.8 mm
CM750-500-E01	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	500 mm	1000 mm	12.0 mm	12.7 mm

### E02 (400 – 750 nm) and E03 (750 – 1000 nm) Broadband Dielectric Coated Concave Spherical Mirrors

ITEM #	ITEM #	\$	£	€	RMB	D	f	R	T <sub>c</sub>	T <sub>e</sub>
CM127-012-E02	CM127-012-E03	\$ 108.00	£ 77.76	€ 93,96	¥ 860.76	1/2"	12 mm	24 mm	3.0 mm	3.8 mm
CM127-025-E02	CM127-025-E03	\$ 108.00	£ 77.76	€ 93,96	¥ 860.76	1/2"	25 mm	50 mm	3.0 mm	3.4 mm
CM127-050-E02	CM127-050-E03	\$ 108.00	£ 77.76	€ 93,96	¥ 860.76	1/2"	50 mm	100 mm	3.0 mm	3.2 mm
CM254-025-E02	CM254-025-E03	\$ 154.00	£ 110.88	€ 133,89	¥ 1,227.38	1"	25 mm	50 mm	6.0 mm	7.6 mm
CM254-050-E02	CM254-050-E03	\$ 154.00	£ 110.88	€ 133,89	¥ 1,227.38	1"	50 mm	100 mm	6.0 mm	6.8 mm
CM254-075-E02	CM254-075-E03	\$ 154.00	£ 110.88	€ 133,89	¥ 1,227.38	1"	75 mm	150 mm	6.0 mm	6.5 mm
CM254-100-E02	CM254-100-E03	\$ 154.00	£ 110.88	€ 133,89	¥ 1,227.38	1"	100 mm	200 mm	6.0 mm	6.4 mm
CM508-050-E02	CM508-050-E03	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	50 mm	100 mm	9.0 mm	12.3 mm
CM508-100-E02	CM508-100-E03	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	100 mm	200 mm	9.0 mm	10.6 mm
CM508-150-E02	CM508-150-E03	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	150 mm	300 mm	9.0 mm	10.1 mm
CM508-200-E02	CM508-200-E03	\$ 225.00	£ 162.00	€ 195,75	¥ 1,793.25	2"	200 mm	400 mm	9.0 mm	9.8 mm
CM750-075-E02	CM750-075-E03	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	75 mm	150 mm	12.0 mm	16.8 mm
CM750-150-E02	CM750-150-E03	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	150 mm	300 mm	12.0 mm	14.4 mm
CM750-200-E02	CM750-200-E03	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	200 mm	400 mm	12.0 mm	13.8 mm
CM750-500-E02	CM750-500-E03	\$ 349.00	£ 251.28	€ 303,63	¥ 2,781.53	75.0 mm	500 mm	1000 mm	12.0 mm	12.7 mm

### E04 (1280 – 1600 nm) Broadband Dielectric Coated Concave Spherical Mirrors

ITEM #	\$	£	€	RMB	D	f	R	T <sub>c</sub>	T <sub>e</sub>
CM127-012-E04	\$ 84.00	£ 60.48	€ 73,08	¥ 669.48	1/2"	12 mm	24 mm	3.0 mm	3.8 mm
CM127-025-E04	\$ 84.00	£ 60.48	€ 73,08	¥ 669.48	1/2"	25 mm	50 mm	3.0 mm	3.4 mm
CM127-050-E04	\$ 84.00	£ 60.48	€ 73,08	¥ 669.48	1/2"	50 mm	100 mm	3.0 mm	3.2 mm
CM254-025-E04	\$ 107.00	£ 77.04	€ 93,09	¥ 852.79	1"	25 mm	50 mm	6.0 mm	7.6 mm
CM254-050-E04	\$ 107.00	£ 77.04	€ 93,09	¥ 852.79	1"	50 mm	100 mm	6.0 mm	6.8 mm
CM254-075-E04	\$ 107.00	£ 77.04	€ 93,09	¥ 852.79	1"	75 mm	150 mm	6.0 mm	6.5 mm
CM254-100-E04	\$ 107.00	£ 77.04	€ 93,09	¥ 852.79	1"	100 mm	200 mm	6.0 mm	6.4 mm
CM508-050-E04	\$ 164.00	£ 118.08	€142.68	¥ 1,307.08	2"	50 mm	100 mm	9.0 mm	12.3 mm
CM508-100-E04	\$ 164.00	£ 118.08	€142.68	¥ 1,307.08	2"	100 mm	200 mm	9.0 mm	10.6 mm
CM508-150-E04	\$ 164.00	£ 118.08	€142.68	¥ 1,307.08	2"	150 mm	300 mm	9.0 mm	10.1 mm
CM508-200-E04	\$ 164.00	£ 118.08	€142.68	¥ 1,307.08	2"	200 mm	400 mm	9.0 mm	9.8 mm
CM750-075-E04	\$ 209.00	£ 150.48	€ 181,83	¥ 1,665.73	75.0 mm	75 mm	150 mm	12.0 mm	16.8 mm
CM750-150-E04	\$ 209.00	£ 150.48	€ 181,83	¥ 1,665.73	75.0 mm	150 mm	300 mm	12.0 mm	14.4 mm
CM750-200-E04	\$ 209.00	£ 150.48	€ 181,83	¥ 1,665.73	75.0 mm	200 mm	400 mm	12.0 mm	13.8 mm
CM750-500-E04	\$ 209.00	£ 150.48	€ 181,83	¥ 1,665.73	75.0 mm	500 mm	1000 mm	12.0 mm	12.7 mm

### Metallic-Coated Concave Spherical Mirrors

UV ENHANCED ALUMINUM	PROTECTED ALUMINUM	PROTECTED SILVER	PROTECTED GOLD									
ITEM #	ITEM #	ITEM #	ITEM #	\$	£	€	RMB	D	f	R	T <sub>c</sub>	T <sub>e</sub>
CM127-012-F01	CM127-012-G01	CM127-012-P01	CM127-012-M01	\$ 34.00	£ 24.48	€ 29,58	¥ 270.98	1/2"	12 mm	24 mm	3.0 mm	3.8 mm
CM127-025-F01	CM127-025-G01	CM127-025-P01	CM127-025-M01	\$ 34.00	£ 24.48	€ 29,58	¥ 270.98	1/2"	25 mm	50 mm	3.0 mm	3.4 mm
CM127-050-F01	CM127-050-G01	CM127-050-P01	CM127-050-M01	\$ 34.00	£ 24.48	€ 29,58	¥ 270.98	1/2"	50 mm	100 mm	3.0 mm	3.2 mm
CM254-025-F01	CM254-025-G01	CM254-025-P01	CM254-025-M01	\$ 52.00	£ 37.44	€ 45,24	¥ 414.44	1"	25 mm	50 mm	6.0 mm	7.6 mm
CM254-050-F01	CM254-050-G01	CM254-050-P01	CM254-050-M01	\$ 52.00	£ 37.44	€ 45,24	¥ 414.44	1"	50 mm	100 mm	6.0 mm	6.8 mm
CM254-075-F01	CM254-075-G01	CM254-075-P01	CM254-075-M01	\$ 52.00	£ 37.44	€ 45,24	¥ 414.44	1"	75 mm	150 mm	6.0 mm	6.5 mm
CM254-100-F01	CM254-100-G01	CM254-100-P01	CM254-100-M01	\$ 52.00	£ 37.44	€ 45,24	¥ 414.44	1"	100 mm	200 mm	6.0 mm	6.4 mm
CM508-050-F01	CM508-050-G01	CM508-050-P01	CM508-050-M01	\$ 78.00	£ 56.16	€ 67,86	¥ 621.66	2"	50 mm	100 mm	9.0 mm	12.3 mm
CM508-100-F01	CM508-100-G01	CM508-100-P01	CM508-100-M01	\$ 78.00	£ 56.16	€ 67,86	¥ 621.66	2"	100 mm	200 mm	9.0 mm	10.6 mm
CM508-150-F01	CM508-150-G01	CM508-150-P01	CM508-150-M01	\$ 78.00	£ 56.16	€ 67,86	¥ 621.66	2"	150 mm	300 mm	9.0 mm	10.1 mm
CM508-200-F01	CM508-200-G01	CM508-200-P01	CM508-200-M01	\$ 78.00	£ 56.16	€ 67,86	¥ 621.66	2"	200 mm	400 mm	9.0 mm	9.8 mm
CM750-075-F01	CM750-075-G01	CM750-075-P01	CM750-075-M01	\$ 149.00	£ 107.28	€ 129,63	¥ 1,187.53	75.0 mm	75 mm	150 mm	12.0 mm	16.8 mm
CM750-150-F01	CM750-150-G01	CM750-150-P01	CM750-150-M01	\$ 149.00	£ 107.28	€ 129,63	¥ 1,187.53	75.0 mm	150 mm	300 mm	12.0 mm	14.4 mm
CM750-200-F01	CM750-200-G01	CM750-200-P01	CM750-200-M01	\$ 149.00	£ 107.28	€ 129,63	¥ 1,187.53	75.0 mm	200 mm	400 mm	12.0 mm	13.8 mm
CM750-500-F01	CM750-500-G01	CM750-500-P01	CM750-500-M01	\$ 149.00	£ 107.28	€ 129,63	¥ 1,187.53	75.0 mm	500 mm	1000 mm	12.0 mm	12.7 mm